AMENDMENTS TO THE DRAWINGS

Please replace the drawing sheet of record containing Fig. 3, with the drawing sheet attached hereto.

REMARKS

The application has been amended to correct the cited informalities, to distinguish the claimed invention over the cited prior art, and to place the application, as a whole, into *prima facie* condition for allowance at this time. Substantial care has been taken to avoid the introduction of any new subject matter into the application as a result of the foregoing amendments.

In the process of reviewing the application towards preparation of this response to the above-identified Office Action, Applicant has noted several typographical, grammatical and/or syntactical informalities in the specification and has accordingly amended the specification, as indicated. Applicant respectfully submits that no new subject matter has been added to the specification as a result of the foregoing amendments. Entry and acceptance of the foregoing amendments to the specification are respectfully solicited.

The Examiner has required that Fig. 3 should be designed as -- Prior Art --. Applicant submits herewith a replacement drawing sheet, in which the indicated caption has been inserted. Applicant submits that the Examiner's basis for objection to the drawings should be deemed overcome, and reconsideration and withdrawal of any objection to the drawings are respectfully solicited.

The Examiner has objected to the claims on the basis that they contain reference numerals which are not enclosed by parentheses [()]. Although the Examiner has not so specified, Applicant presumes that the Examiner is making reference to the *designations of the angles* in the claims (through the use of Greek letters) in claims 3 and 4 (the only claims not withdrawn still containing "reference numerals", and not to the appearance of the *numerical values of those angles* (in Arabic numerals). Accordingly, Applicant has amended claims 3 and 4 to enclose the Greek letter angle designations in parentheses. In view of the foregoing amendments, Applicant respectfully submits that the Examiner's bases for objection to the claims should be deemed overcome, and reconsideration and withdrawal of the objections to the claims are respectfully solicited.

Claims 1 - 3 have been rejected under 35 U.S.C. 102(b) as being anticipated by *Emmons*, U.S. 2,652,083. Claims 1 - 2 and 4 have been rejected under 35 U.S.C. 102(b)

as being anticipated by *Nygård*, US 6,857,832 B2. Claims 5 - 6 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Nygård*, in view of *Crisp*, US 2,769,355. Claims 7 - 11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Nygård*, in view of *Crisp*, US 2,769,355, and further in view of *Guehring et al.*, US 6,213,692. Applicant respectfully traverses the Examiner's substantive bases for rejection of the claims. In particular, Applicant respectfully traverses certain ones of the characterizations made with respect to the purported teachings of the cited references.

Applicant has amended independent claims 1 and 8, so that each includes the limitation that "the axial relief surfaces [are] separated from the leading edges of the spur structures by one or more planar cutting edge surfaces, wherein the axial relief surfaces are disposed at a separate, substantially steeper angle, relative to a plane perpendicular to the longitudinal axis of the twist drill, than the one or more planar cutting edge surfaces". Support for these limitations, and evidence that these limitations were components of the contemplated invention in the inventor's possession at the time of filing are found in Figs. 12 - 15, as well as the specification at ¶¶ [0059], [0060], [0062] and [0063] (of the specification as originally filed). Accordingly, entry of the proposed amendments to claims 1 and 8 are respectfully solicited.

To facilitate the discussion herein, Applicant has attached Exhibit A, comprising the drawing sheet from the instant application, wherein Figs. 12 - 14 are shown. In Fig. 12, the areas comprising the planar axial relief surfaces and the other planar surfaces interposed between the cutting edges (as opposed to the cutting lips - they are entirely different structures) and the planar axial relief surfaces, have been cross-hatched in opposite directions.

Emmons, U.S. 2,652,083 discloses a brad and spur drill bit in which the surface which trails from the cutting edge 7 is at a constant angle, proceeding to the flute. The angle E to which the Examiner makes reference is *not* a planar axial relief surface, as understood in the context of Applicant's invention; in Applicant's invention, the axial relief surfaces are surfaces 162. Rather, angle E refers to the angle of the surface (analogous to surfaces 158 in Applicant's instant application) that immediately trails the

cutting edges, makes with a plane that is normal to the longitudinal axis of the drill bit. Accordingly, in *Emmons*, U.S. 2,652,083, **there are no separate planar axial relief surfaces that are separated from the leading edges of the spur structures by one or more other planar surfaces**, wherein the axial relief surfaces are at a separate, **substantially steeper angle**, than the interposed one or more other planar surfaces, as required by the limitations of independent claims 1 and 8, as amended.

Applicant likewise respectfully traverses the characterizations made regarding the nature of the structures of *Nygård*, US 6,857,832 B2. In particular, the angle alpha (α), which the Examiner has stated represents the axial relief surface, in fact merely represents the angle (originating at the longitudinal, rotational axis of the drill bit) that the cutting edge makes with a plane extending perpendicular to the longitudinal axis of the drill. See, col. 2, ll. 9 - 11 and ll. 18 - 24. Clearly, angle alpha (α) is merely intended to refer to the radially inward, axially rearward sweep of the spur structures of the bit of Fig. 2 of the *Nygård*, US 6,857,832 B2 reference, and not a tangentially-derived angle between a plane perpendicular to the longitudinal axis of the drill and a discrete surface separated from the actual cutting edge, by one or more other planar surfaces. The true nature of this structure is evident because the actual angle of the axial relief surface, of Applicant's invention, is shown in Fig. 14, which is a view of a drill bit that is rotated 90° from the view of Fig. 2 of the *Nygård*, US 6,857,832 B2 reference, to which the Examiner makes reference. The angle of the axial relief surface, as understood in the context of Applicant's invention, simply cannot be seen from the direction of the view of Fig. 3 of the *Nygård*, US 6,857,832 B2 reference, even if such planar axial relief surfaces existed in that reference, which they do not.

Applicant respectfully further submits that the disclosure of the *Nygård*, US 6,857,832 B2 is internally inconsistent such that a complete and clear idea of the drill tip structure which is meant to be disclosed by the reference is nearly impossible to discern. For example, the view of Fig. 5 is purported to be a sectional view taken along line V-V of Fig. 3, **but there is no such line in Fig. 3, or any of the other figures in the reference.** Moreover, the direction of view of Fig. 5 must be in the same directly as that of Fig. 3, such that the plane of the figure is perpendicular to the axis of

the drill bit, so that the observer looks upon a sectional end-on view of the drill bit, highly magnified, with the free edge of surface 10a being the leading edge of the cutting lip that runs along the land down the length of the drill. Any other interpretation of Fig. 5 makes no sense. For example, if Fig. 5 were considered to be in a plane parallel to the drill axis, then both of faces 10a and 10b would be negative, or reverse-angled, relative to the direction of advance, and as such would result in non-functional cutting edges, since they would be prevented from engaging the surface of the material being drilled! Accordingly, neither of surfaces 10a nor 10b can possibly represent a planar axial relief surface, in the context of the disclosure of Applicant's invention.

Accordingly, Applicant respectfully submits that to the extent that the *Nygård*, US 6,857,832 B2 reference can be understood, it is simply incapable of teaching or suggesting planar axial relief surfaces, such as that claimed in amended claims 1 and 8, wherein there are **separate planar axial relief surfaces that are separated from the leading edges of the spur structures by other planar surfaces**, wherein the axial relief surfaces are at a separate, **substantially steeper angle**, than the interposed other planar surfaces.

Applicant further respectfully submits that the *Crisp*, US 2,769,355, and *Guehring et al.*, US 6,213,692 references both are hopelessly incapable of teaching or suggesting any kind of structure even remotely similar to the planar axial relief structures of Applicant's invention of amended claims 1 and 8.

Accordingly, Applicant submits that Applicant's invention of amended claims 1 and 8 patentably distinguish over each of the *Emmons*, U.S. 2,652,083; *Nygård*, US 6,857,832 B2; *Crisp*, US 2,769,355 and *Guehring et al.*, US 6,213,692 references, whether taken alone or in combination with one another, and that the Examiner's bases for rejection of claims 1 and 8 should be deemed overcome. Therefore, reconsideration and withdrawal of the rejection of claims 1 and 8, and allowance thereof, are respectfully solicited.

Inasmuch as dependent claims 2 - 7 and 9 - 11 merely serve to further define the inventions of independent claims 1 and 8, respectively, which themselves should be

deemed allowable, reconsideration and withdrawal of the rejections of claims 2 - 7 and 9 - 11, and allowance thereof, are respectfully solicited.

Applicant submits that the application as a whole, including all of claims 1 - 11, is in prima facie condition for allowance, and reconsideration and allowance of the application as a whole are respectfully solicited.

Should anything further be required, a telephone call to the undersigned, at (312) 456-8400, is respectfully invited.

Respectfully submitted,

GREENBERG TRAURIG, LLP

Dated: January 10, 2006

Douglas B. Teaney
One of Attorneys for Applicant

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this AMENDMENT AND COMMUNICATION is being transmitted via telecopier, to Examiner Eric Gates, Art Unit 3722, United States Patent and Trademark Office, to telecopier number 571-273-8300, on 10 Jan. 2006.